

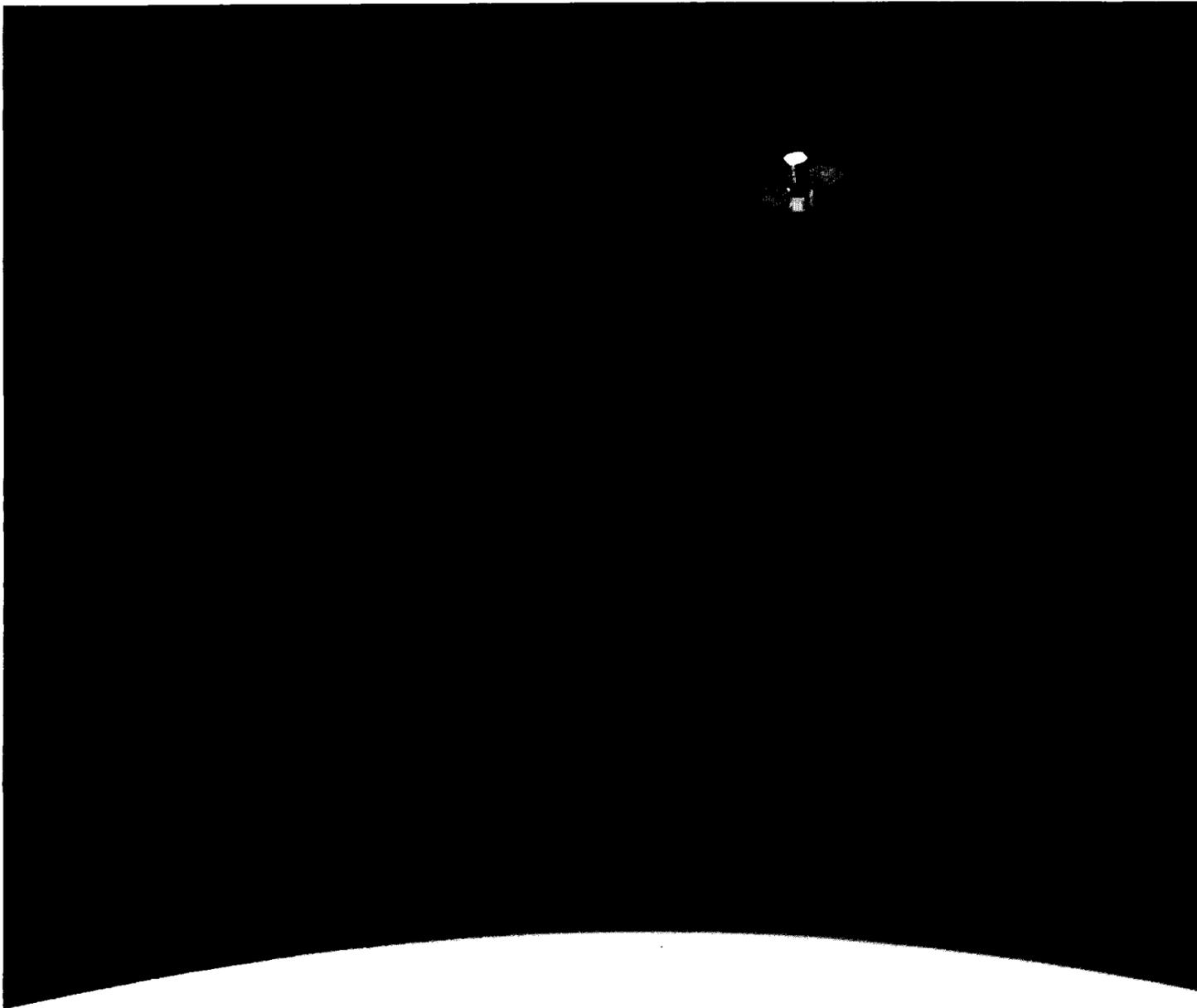
Space News Roundup

Vol. 23 No. 18

October 5, 1984

National Aeronautics and Space Administration

IMAX views Solar Max



The Solar Maximum Mission Satellite, repaired and back to business, floats above the Earth in this still frame from IMAX film shot aboard STS 41-C in April. Near the horizon at left is the Moon. The rushes so far from the IMAX footage shot aboard recent Shuttle flights have been spectacular,

those who have seen it say, and work proceeds on the first movie ever shot in space, the IMAX film "The Dream is Alive," to be released next year. For more IMAX scenes, turn to page 3. (Photo courtesy the Threshold Corp., Copyright 1984)

WESTAR pact clears way for retrieval

An agreement signed Sept. 20 between NASA and Merrett Syndicates Ltd. has cleared the way for retrieval of both the Palapa B-2 and WESTAR VI communications satellites which have been lost in space since February.

Merrett Syndicates Ltd. represents the insurance underwriters who wish to retrieve the WESTAR VI satellite during Mission 51-A in early November. Both WESTAR and Palapa were successfully deployed from the Orbiter *Challenger* during Mission 41-B in February, but neither reached their proper orbits when their perigee kick motors failed.

On Aug. 12, NASA signed a similar agreement with the insurance underwriters for Palapa — Merrett Syndicates and International Technology Underwriters — for the retrieval of that satellite. Since 51-A is now a dual-retrieval mission, the cost for returning each satellite to Earth will be \$2.75 million, compared with \$4.8 million for one satellite.

Hughes Aerospace, builder of the HS 376 satellites, will begin commanding a series of more than 60 thruster firings for each comsat beginning in mid-October in order to lower their orbits to about 200 nautical miles. One week before the flight, now planned for launch during the first week of November, the orbits will be lowered to 190 nautical miles, the altitude at which the Orbiter *Discovery* will close in for retrieval operations.

The five person crew for 51-A is scheduled to deploy two other communications satellites, Telesat-H and SYNCOM IV-1, on orbits 22 and 33, respectively, and conduct activities associated with the Aggregation of Red Blood Cells (ARC) and Radiation Monitoring Equipment (RME) experiments. The 51-A crew consists of Commander Rick Hauck, Pilot David Walker, and Mission Specialists Joe Allen, Dale Gardner and Anna Fisher.

X-29 headed west for flight tests

Not since Tom McMurtry landed the X-24B lifting body in 1975 has an "X" series aircraft undergone tests at the Ames-Dryden Flight Research Facility. But that's about to change.

In mid-October, the Grumman X-29 Forward Swept Wing (FSW) demonstrator aircraft will be shipped to Dryden for several months of flight tests calculated to prove the design concept and quantify what is now seen as a

very promising aerodynamic potential.

The X-29 FSW aircraft was rolled out at Grumman's Bethpage, NY facility August 27 during ceremonies attended by Vice President George Bush, NASA Administrator James M. Beggs, Ames Research Center Director William F. Ballhaus Jr., Ames-Dryden X-29 Project Manager Walter J. Sefic and NASA Project Pilot Stephen D. Ishmael, as well as by dignitaries

of Grumman, the Defense Advanced Research Projects Agency (DARPA) and the U.S. Air Force.

The X-29's shipment to Dryden in mid-October will mark a transition in the program. Moving from a technical support role, NASA will participate in the initial Grumman demonstration flights, then become the lead technical organization in the flight research program. Previous "X" series aircraft tested by NASA and its predecessor agency, the National Advisory Committee for Aeronautics, include the X-1, the D-558, the X-3, X-4, X-5, XB-70 and the X-15, as well as the lifting bodies which paved the way for the Space Shuttle.

General objectives of the flight program include performance evaluation at design points of 0.9 and 1.2 Mach at 30,000 feet; determination of the X-29's total lift and drag coefficients; evaluation of its basic flight qualities and control system performance; determination of its wing and canard aerodynamic flow characteristics (and comparisons to wind

tunnel-derived predictions); measurement of wing loading and deflection; and determination of the X-29's flutter and aeroservo-elastic response.

Grumman will perform the first four flights as part of the functional checkout with speeds limited to a maximum of 400 m.p.h. and an altitude of 17,500 ft. The second phase of the program will be a joint Grumman/U.S. Government four-month flight series that

is planned to increase performance to Mach 0.9 at 30,000 feet (almost 600 m.p.h.). After this second phase, the aircraft will undergo a control system update, and Grumman will then perform a short checkout of the new system.

The final test phase will be performed by the Government team and will undertake full flight envelope expansion. Ultimately, speeds of Mach 1.5 at 40,000 feet

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Composites, which aided X-29, to be studied more closely

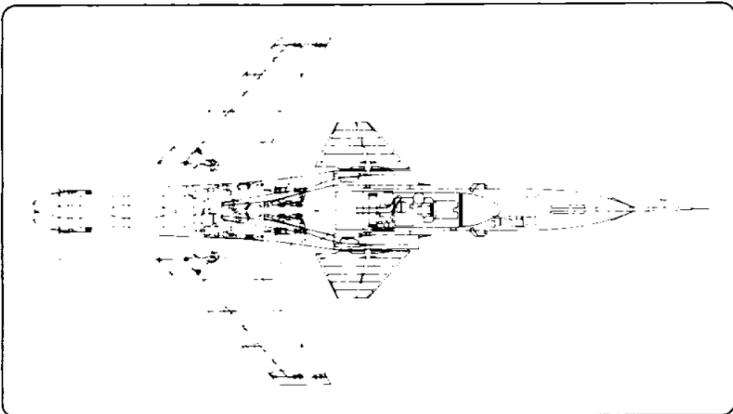
One of the major advances of the 1970s which made the X-29 possible was the development of composite materials which are strong, durable and can bend with stresses in ways much different than metals used in aircraft construction. Best of all, composites are lighter.

NASA has embarked on a new phase in its research program into composites to show that a

transport aircraft's metal skin and supporting structure can be replaced with nonmetallic composite materials to save weight and manufacturing costs. Reducing an aircraft's weight increases its fuel efficiency and ends up saving money.

Work under this new phase of study will represent the first application of composite materials

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Space News Briefs

EUVE to be launched in 1988

NASA has announced the start of the Extreme Ultraviolet Explorer project (EUVE), a new astronomy satellite to be launched into Earth orbit from the Space Shuttle in 1988. The primary aim of the explorer is to make the first all-sky map in the extreme ultraviolet band of the electromagnetic spectrum, a band between ultraviolet and X-ray light. Extreme ultraviolet astronomy is a relatively new field, and the EUVE will be a true explorer. To date, only 10 cosmic sources of EUV radiation have been chronicled. This is in stark contrast to the thousands of X-ray and infrared sources and millions of optical objects that have been cataloged. EUVE surveys will include examinations of stellar coronae, white dwarf stars and clouds of interstellar gas within a few hundred light years of our Sun.

MSFC to test filament wound SRBs

Two of the new lightweight filament wound solid rocket booster (SRB) motor case segments have arrived at the Marshall Space Flight Center for an extensive structural test program to begin in November. Preparations for the program include installing 670 strain gauges and 5,400 wires on the interior and exterior of the segments, providing 1,834 data channels during tests. The program is a major step in certifying the new lightweight cases for future Shuttle flights. The new cases are made of plastic filaments reinforced with graphite fibers, wound into a cylinder. Each case weighs about 33,000 pounds less than the current steel motor cases now in use. The motor cases hold the solid propellants that generate 1.9 million pounds of thrust per SRB at liftoff. The lighter cases are expected to increase Shuttle payload carrying capacity by about 4,600 pounds. The new cases, the largest structures of their type ever built, are planned for first use in 1985.

Extragalactic pulsar photographed

Astronomers have taken the first pictures of an extragalactic pulsar, the superdense remnant of a dead star that spins 20 times per second and throws out intense beams of energy. The pulsar, the first ever to be photographed outside the Milky Way, lies in the Large Magellanic Cloud, a companion galaxy to our own. Scientists are studying the star's braking mechanism — how it slows down over time — and sudden movements of its surface, known as starquakes. Because it's strong magnetic field, a trillion times stronger than the Earth's — produces a searchlight beam of energy that sweeps the cosmos due to the pulsar's rotation, scientists are able to detect minute changes in the pulsar's diameter. "Every change in a pulsar's diameter, no matter how minute, is accompanied by a corresponding shift in its period, so we hope to be able to detect starquakes as small as one micron," said Carl Pennypacker of the University of California's Lawrence Berkeley Lab. "It strikes me as almost absurdly fascinating to think that we are measuring one-micron changes at a distance of 150,000 light years. It's crazy but feasible," he said.

European astronauts form association

Seven astronauts from Western Europe have formed an association which is intended in part to promote an awareness of European manned space flight activities. The Association of European Astronauts (AEA) has seven members: ESA Astronauts Claude Nicollier, Ulf Merbold and Wubbo Ockels, French Astronauts Patrick Baudry and Jean-Loup Chretien, and German Astronauts Reinhard Furrer and Ernst Messerschmid. Of the seven, Merbold and Chretien are space flight veterans. Merbold flew on the STS-9/Spacelab mission, while Chretien flew on the USSR's Soyuz T-6/Salyut 7 mission. The other astronauts have been assigned to flights which will take place during 1985. Newly selected payload specialists from Britain and Italy have also been invited to join the association.

Bulletin Board

Wanderers plan training session

The Southwind Wanderers Backpacking Club invites girls, grades 7 to 12, and interested adults to attend a training session from 9 a.m. to 1 p.m. on Saturday, Oct. 13 at La Porte Junior High School, 401 S. Broadway in La Porte. The club is associated with the San Jacinto Girl Scouts and was established in 1976. Members have had the opportunity to hike and camp near the Lone Star trail, in the Texas Hill Country and in several wilderness areas in the Rocky Mountains. New members must be trained at the Oct. 13 meeting to be eligible to hike and camp with the club. The cost is \$20 for seven monthly overnight trips from November to May. For more information, call M. Huber at 488-8050.

Osborne group to meet

The Clear Lake Osborne and CP/M computer group will hold its next meeting at 9 a.m. Oct. 13 at the Gilruth Recreation Center. The group is open to all CP/M computer enthusiasts who use Osbornes, Morrrows, KayPros, Zorbas, LoboMaxs and other machines. The group offers discounts, assistance, education and information exchange. For more information on the meeting or the group, call Maynard Huntley at x6441 or write P.O. Box 57613, Webster, TX 77598.

Bay Area PC Organization to meet

BAPCO, the Bay Area PC Organization, will hold its next monthly meeting at 7:30 p.m. Oct. 16 at the Holiday Inn on NASA Road One. BAPCO, the local IBM-PC users' group, meets regularly on the third Tuesday of each month. For more information, call Earl Rubenstein at x3501 or Hattie Thurlow at x2213.

Clinic offering flu immunizations

Influenza immunizations are now available on a drop-in basis, Monday through Friday, from 10 a.m. to noon and from 2 p.m. to 4 p.m. at the JSC Clinic, according to Occupational Health Officer Charles Bergtholdt. An annual routine influenza immunization is not recommended for healthy adults, he said. "It is recommended for persons of all ages who have chronic conditions such as heart disease of any type, chronic bronchopulmonary disease such as asthma, chronic bronchitis and emphysema and diabetes mellitus and other chronic disorders," he said. A single dose of the vaccine is considered sufficient to give immunity. Bergtholdt cautioned that people allergic to eggs or egg products must not take the shot, and said the vaccination will not be given to anyone who has a febrile respiratory illness or other active infection.



Mission Specialist David Leestma (left) and Kathy Sullivan (right) are seen here practicing recently for this week's Orbital Refueling System spacewalk during Mission 41-G. The trial run was part of a joint integrated sim in preparation for the flight.

Composites to be studied more closely

(Continued from page 1)

in the construction of primary wing and fuselage structures for transport-class aircraft.

NASA's long-range goal is to provide commercial air transport manufacturers with the technology to produce composite structures and apply them on new aircraft, or on derivatives of current aircraft, in substantial numbers by the early 1990s. By the mid-1990s, researchers at NASA's Langley Research Center, where the new composites program will be managed, expect to see about 75 percent of the airframe structure of a transport made of composites.

Says Langley's Herman L. Bohon, manager of Langley's aircraft energy efficiency (ACEE) composites project office, "If that should be the case, aircraft would be about 15 percent more fuel efficient than today, just from the reduction in weight alone." Added Bohon, "A 15-percent reduction in fuel on a wide-bodied aircraft like a DC-10 or Boeing 747 represents a saving of 750,000 gallons of fuel a year. That begins to add up when an airline has a fleet of 100 to 200 aircraft."

Bohon cites ACEE program projections that transport wings made of graphite epoxy composites would average about 35 percent lighter than their aluminum counterparts, while a fuselage made of composites would be about 25 percent lighter.

Composites also may reduce the manufacturing cost of transport aircraft. Bohon says the fuselage in particular would benefit from composite construction through a dramatic reduction in parts and an equally dramatic

reduction in labor-intensive work. Fitting and joining metal body sections around the fuselage of a transport plane now requires thousands of rivets and other parts, and fastening joints is largely done by hand. Composite construction may reduce the number of joints through fabrication of larger body sections, and eliminate rivets.

NASA's advanced composite structures technology is part of the agency's multi-center program — a cooperative effort with the nation's major transport airframe manufacturers: Boeing Commercial Airplane Co., Seattle, Wash.; the Lockheed-California and Lockheed-Georgia Companies; and Douglas Aircraft Co., Long Beach, Calif. NASA's Langley Research Center manages the ACEE program.

The airframe manufacturers will begin their contribution to the new initiative with a round of focused technology efforts. Through 1986, Douglas will study structural problems of fuselage areas with large cut-outs (as in the window belt area). Lockheed will document the structural performance under impact loads of a composite fuselage and study energy-absorbing designs for the lower fuselage. Boeing will work to improve the damage tolerance of composites.

Following these efforts, Boeing will incorporate the Lockheed and Douglas information with its own for a major fuselage design that, among other things, is to be highly damage-tolerant. NASA hopes by 1988 to have the design and manufacturing technology that will

justify additional funding for subsequent fabrication and ground tests of full-size barrel sections to simulate structural behavior to impact and flight loads.

Concurrent with the fuselage studies, the new initiative includes programs with Lockheed and Douglas to develop and demonstrate composite wing technology, including ground tests of large segments of wing boxes. Lockheed will concentrate on redesign of the center wing section of a Lockheed C-130 cargo transport, using composite material. The 37-foot section will provide opportunities to study the operational aspects of fuel in a composite's wing and address questions of high local stresses from pylon attachments and major control surfaces. The Douglas program is in final stages of definition.

The six-year Advanced Composite Structures Technology program builds upon a series of laboratory and commercial flight tests begun by NASA in 1976. The composites program achieved an important milestone this spring and summer when the first composite primary tail structure went into commercial flight service. Marking the conclusion of several years of effort, five pairs of horizontal tails—called ship sets—have been installed on Boeing 737-200s.

Lockheed has designed and fabricated two L-1011 vertical tails, that will not fly. And by early next year, Douglas will have produced three DC-10 vertical tails, one of which will fly. Performance of the components in flight service will be monitored by the airlines for about 10 years.—Keith Henry, Langley Research Center

X-29

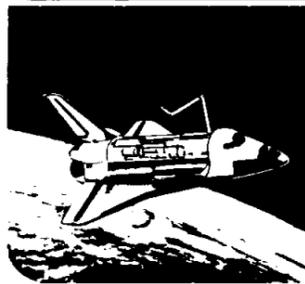
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(about 1,000 m.p.h.) are expected. NASA project pilots for the X-29 tests are Ishmael and Rogers E. Smith.

The X-29 program is a joint effort of DARPA, the major funding agency; the Air Force, which is acting as the procurement and management agent; NASA, which has been heavily involved in wind tunnel studies and now the flight test program; and Grumman, the aircraft manufacturer. —Dryden X-Press

NASA
Lyndon B. Johnson Space Center

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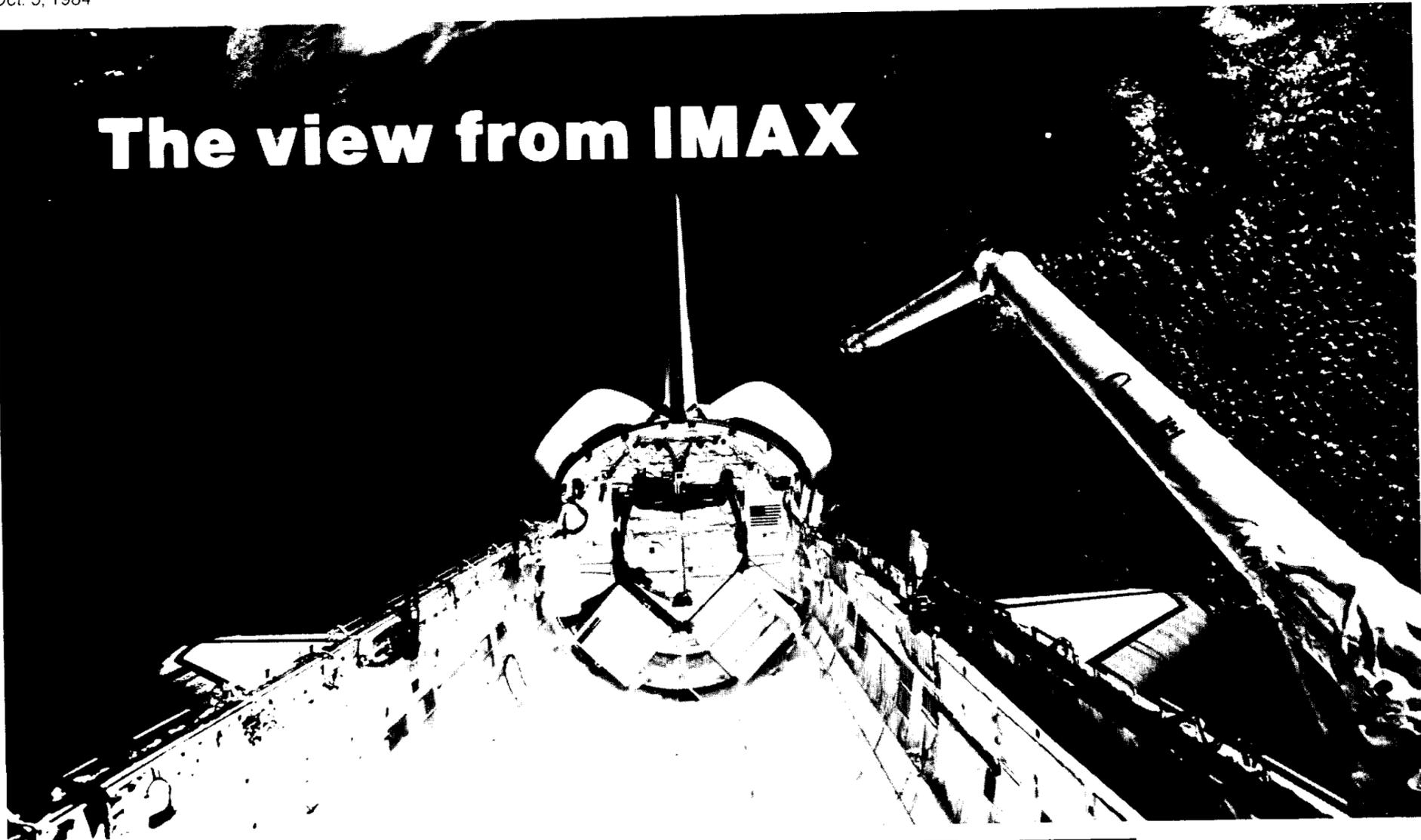


The **Roundup** is an official publication of the National Aeronautics and Space Administration, Lyndon B. Johnson Space Center, Houston, Texas, and is published every other Friday by the Public Affairs Office for all space center employees. **Roundup** deadline is the first Wednesday after publication.

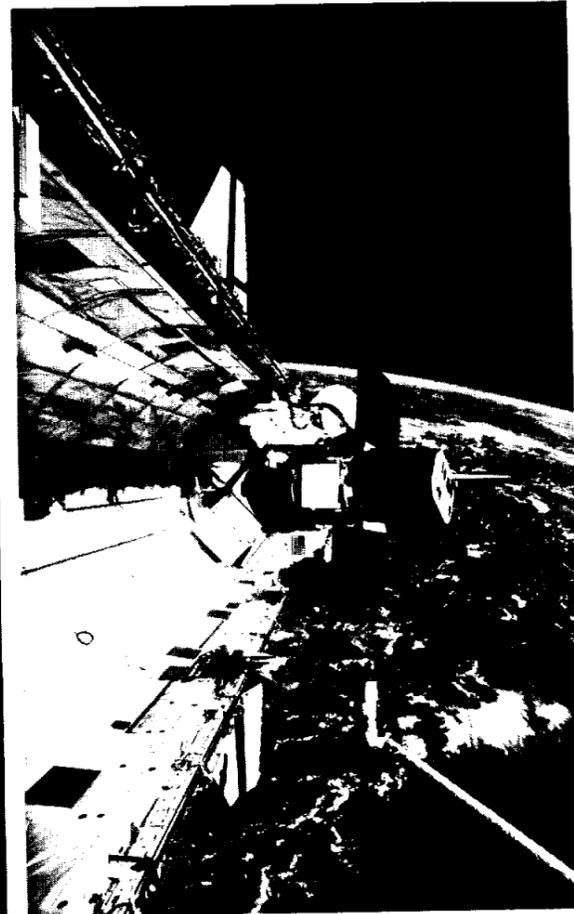
Editor

Brian Welch

The view from IMAX



Imagine these images as part of a film which plays before you on a screen five stories high, filling your entire field of vision, and you begin to have some sense of what "The Dream is Alive" will do to your senses when it is released in 1985. Now under production for the Smithsonian's National Air and Space Museum, the IMAX Systems Corp. film, the first of its kind to be shot in space, has been a customer aboard the last three Shuttle flights. These scenes, from STS 41-C last April, illustrate some of what has come of it. Above, the Challenger passes over the African coast after deploying the Long Duration Exposure Facility. At left, the Solar Max satellite is tilted toward the Sun to recharge its batteries prior to release as the Orbiter flies near the terminator. Below, right, Solar Max awaits repairs, while, below, left, the crew members of 41-C cavort on the aft flight deck as they celebrate the successful release of Solar Max. (Photos courtesy Threshold Corp., Copyright 1984.)



Roundup Swap Shop

Ads must be under 20 words total per person, double spaced, and typed or printed. Deadline for submitting or cancelling ads is 5 p.m. the first Wednesday after publication. Send ads to AP 3 Roundup, or deliver them to the Newsroom, Building 2 annex. No phone-in ads will be taken. Swap Shop is open to JSC federal and on-site contractor employees for non-commercial personal ads.

Property & Rentals

For rent: Galveston-by-the-Sea condo, 2 BR, furnished, for rent by day (2 minimum), week or month. Call Clements, Jr., 474-2622.

For sale: CLC/Ramada townhouse, 2-2.5-2, new carpet, 1,200 sq. ft., \$59K. Call 480-4862 evenings.

For sale: 3-1 house at Horseshoe Lake Estates, Romayor, TX, fully furnished, near Lake/Trinity River, located at Hwy. 105 between Cleveland and Rye. Call Susan, x3138 or 479-5594 after 5 p.m.

For lease: Baywind II condo, 1 BR, FPL, kitchen appliances, W/D connections, pool, exercise room. Call Jim Wiltz, x5437 or 944-0451 after 5 p.m.

For sale/lease: Forest Bend 4-2-2, \$49,500. \$3,000 down, \$475/mo. Call 334-4184 after 5 p.m.

For sale: Beautiful wooded water-view lot at Point Lookout West on Lake Livingston, 75' x 137', below market at \$3,500. Call 946-7587.

Lease: Middlebrook 3-3-2, dream showcase, cathedral living, den, loft, FPL, blinds/drapes, fenced, by tennis and pool, \$695/mo., 1 year or less. Call 486-5528 after 5 p.m.

For rent: Condo in Orlando, near Disney World, week of Oct. 21-27, 2 BR, 2 story, sleeps 4 to 6, best offer. Call Bee Jay, x3278 or 386-8156 after 5 p.m.

For sale: Fishing marina, Toledo Bend, 26 acres, motel/trailers/house, RV/tent spaces, restaurant/grocery/bait, \$250,000/neg., \$65,000 down. Call 486-8127 or (409) 368-2384.

For rent: Baywind 2-2-2 condo, W/D, furnished, \$470/mo. plus elec. plus deposit. Call 333-3992.

For sale: Ellis Landing, 5-2.5-2, master down, FPL, inside utility room, wet bar, 40-ft. dog run, 10% VA loan assumption. Call Lottie, x4846.

For sale: Baywind II condo, 2-2-3, good condition, FPL, leased for \$410, sell for \$36,900. Call Elaine, x5441 or 334-2402.

For lease: 10 acres, Alvin area, fenced, on paved road, horses, cattle, etc. Call Damewood, 482-5572.

For rent: Galveston Gulf-front condo, treat yourself to a 2 day to 1 month vacation, completely furnished, low fall rates. Call Nussman, 488-7762.

For rent: Condo in Durango, Colorado, sleeps 8, Nov. 17-24 and March 30-April 6, \$520/wk. plus deposit. Call John, 996-1017.

For sale: Egret Bay 2-2-2, W/D, microwave, refrig., fans, FPL, pools, storage, boat ramp, \$52,000. Call 333-9447 after 4:30 p.m.

For lease: Baywind I condo, 2-1.5, W/D, new paint and drapes, \$390/mo. plus security deposit. Call Franklin, 474-5267.

For lease: Meadow Creek Village, 3-1-1, large fenced yard, laundry room, clean, \$400/mo. plus security deposit. Call Franklin, 474-5267.

For lease: El Dorado Trace 2-2.5 condo, FPL, W/D, dining room, smoke and burglar alarms, covered parking, no pets/children, \$450/mo. plus deposit. Call 488-5967 after 5 p.m.

For sale: 1.8 acres in Friendswood, all utilities, \$29,500. Call Janice, x5867.

For lease: La Porte 2-1, fenced yard, one house in from Bay, \$350/mo. plus deposit. Call Jenny, x5824.

For sale: 12.566 acres near Center-ville, wooded, creek, deer, electricity and telephone, \$1,495/acre, Texas vet or terms, 10% down, 12% interest. Call Giralda, 921-7212 or Schwab, (214) 536-2672.

Cars & Trucks

1980 Mazda RX-7, AM/FM/cassette, sunroof, custom pinstripe, AC, 73K miles, \$6,450 OBO. Call 334-5437 after 4 p.m.

1973 Olds Delta 88 Royale, one owner, very good condition, \$2,200. Call McNeely, x6347 or 482-5837.

1973 Ford Mustang, rebuilt engine/transmission, needs body work, \$500. Call McNeely, x6347 or 482-5837.

1984 Plymouth Cold, like new, 2,500 miles, AM/FM stereo, auto, AC, 2 door, \$7,400. Call Grace Boyer, 482-7093.

1980 Dodge window van, brown metallic, perfect condition, 68K miles, \$8,000. Call Jack, x2591 or 896-8085.

1974 Ford LTD station wagon, good condition but needs some work, 460 engine, \$500. Call Lottie, x4846.

1977 GMC short bed, 4 x 4, 350, auto, AC, custom interior, clean, good condition, \$3,850 OBO. Call Vaughn, x3421.

1976 Datsun 280Z, 4-sp., AM/FM/cassette, AC, new clutch, tires, radiator, very nice, \$3,500. Call 280-2489 or 554-7643 evenings.

1971 Saab 95 station wagon, AC, AM/FM, good condition, \$700. Call Parish, x4941 or 332-9071.

1977 Cadillac Sedan de Ville, clean, loaded. Call 481-6222.

1974 Plymouth Valiant, 4 dr., auto, AC, stereo radio, 6 cyl., fair condition, \$750. Call 554-6173 after 5 p.m.

1982 Camaro Berlinetta, loaded, 16,700 miles, excellent condition, \$8,200. Call Janice, x5867.

1972 Olds Delta 88, 350 cu. in., 4 dr., PS, PB, cold AC, AM/FM, 4 new radials, runs well, needs vinyl top, \$875. Call Walt, x3481.

1978 Sunbird, sport hatch, 2-door, auto, PS, AC, V-6, low miles, good condition, \$2,475. Call Terry, x2531 or 333-2985 after 4 p.m.

1976 Ford pickup, standard, 6 cyl., AC, new brakes, new clutch, new tires, 85K miles, immaculate, orig. owner, \$2,795. Call 488-3966.

1976 Toyota Corolla, 94K miles, good engine, good tires, dents, rust, cracked windshield, no reverse gear, \$500. Call Lafferty, x4211.

Boats & Planes

15' Skeeter bass boat with 50 HP Johnson, trolling motor, depth sounder, etc., \$2,000. Call Don before 5 p.m. at 280-6307.

Q2 experimental aircraft, 130TT, 64 HP, 150 MPH, 2 seat, based at Houston Gulf. Call B. Wood, x2267 or 333-2373.

Want to purchase 4-place IFR-equipped plane; also 2-seat VFR trainer, excellent tax break available for current owners. Call Mark, x4436 or 554-2538 after 6 p.m.

Sunfish sailboat, galvanized trailer with lights, excellent sail, \$800. call Jack, x6301.

For rent: Piper Lance aircraft, 6-place, club seating, \$75/hr. wet. Call Damewood, 482-5572.

Fly a 1980 Cessna 152 at \$25 and a Piper Warrior at \$38 wet with the JSC Aero Club. Call Jerry, x5447 or Bernie, x2091.

A35 Bonanza, full IFR, DME, encoding altimeter, tip tanks, \$65/hr. Call Bob Carlton, x2271 or 471-4539.

Cycles

1983 Honda GL650 Silver Wing Interstate, 3 mos. old, 2,700 miles, \$2,950. Call 334-5437 after 4 p.m.

Bonanza 5 HP Briggs & Stratton trail bike, good condition, \$175. Call Jack, x6301.

Girl's 20" bike, Sweet Thunder, pink, 3 yrs. old, \$35. Call Dianne, x2558.

Man's Norman 3-speed, \$10; girl's 24" Raleigh 3-speed, \$35. Call 538-3342.

Household

Kenmore freezer, 15.5 cu. ft., like new, \$250. Call Beasley, x5326 or 487-5696 after 5 p.m.

Round butcher block style table and 4 chairs with arms, \$175. Call 486-5342 after 5 p.m.

Spanish velour 2-piece couch with corner slate table, lamp and coffee table included, complete living room set up for \$450. Call Dave, x2557.

Kenmore hot water heater, 52-gal. Economiser 5, plus new pressure valve, 3 mos. old, \$70. Call 482-0935.

Antique Chinese table, small buffet and china cabinet, \$700 for all; two large burled walnut end tables, \$125 each; dining room table, seats 8, hand carved sides and base, newly refinished, \$250. Call 488-5564.

Kenmore gas range, 30", dual continuous cleaning ovens, electronic ignition, new and never used, slight shipped damage, retails for \$900, will sell for \$500. Call Ed Lattier, x5561.

Queen-size mattress and box springs, one year old, like new, \$75. Call 488-2233 after 5 p.m.

Imperial upright freezer, 21 cu. ft., commercial, like new, \$350 OBO. Call Rick, 488-2802 after 6 p.m.

French provincial 4-piece living room suite, 2 chairs, ottoman, 8' couch, all for \$250; Wurlitzer spinet piano, 2 yrs. old, never used, paid \$1,800, will take \$1,000. Call 280-8164.

Full bed, head, foot and side boards, mattress and box spring, very good condition, \$200. Call 488-6521.

Computers

New Lowrance Mach 1 computer graph recorder, \$250. Call Don, 280-6307 before 5 p.m.

Commodore VIC-20 computer w/ additional 8K memory cartridge, \$100. Call 480-6066.

Complete VIC-20 system: VIC-20, extra 8K memory, tape recorder, blank tapes, joystick, Forth, machine language monitor, 5 games, programmers manual and 4 extra books, \$250. Call

Steve, x4395 or 334-6747.

T1 99/4A computer in box, \$50 OBO. Call Dennis, x3486 or 480-5076 after 6 p.m.

Pets

AKC Alaskan Malamute pups, 2 black & white, 1 silver gray. Call 480-6066.

Carpools

Metro 15-passenger vanpool forming from La Porte/Fairmont Park to JSC, 7:30 a.m. to 4 p.m., monthly fares as low as \$40.75. Call Rod, x3901 or Bryan, 739-9996.

Miscellaneous

Large outdoor above-ground swimming pool and filter, \$200. Call Dave, x2557.

High standard Sentinal Mark IV revolver, .22 magnum, 9-shot, nickel finish, \$100. Call T. Ward, 488-5445.

Orthopedic mattress and box spring for double bed; lawn mower. Call Madeline, x2303.

Air hockey table, electric, excellent condition, with accessories, \$100. Call Ed, 481-0679.

Ping pong table; 6' x 14' canvas tent; Gulf Coast 20 main and jib; 2 used 14" Bridgestone radials; 6 HP Seagull; all negotiable. Call Malcolm Jones, x5879 or 471-3303.

Aquarium, 30 gal., excellent condition, with everything but fish, \$75.

Gilruth Center News

Call x3594 for more information

Turkey Trot — The Rec Center's first annual Turkey Trot will be a 5 kilometer run beginning at 7 p.m. Nov. 15. Trophies will be awarded to top male and female runners, with medals to second and third finishers in each group. The cost is \$5 per person, and T-shirts will go to the first 100 people who register.

Basketball officials — If you are interested in becoming a basketball official, sign up at the Rec Center or call Helen Munk at x3594. Basketball league play begins Oct. 9.

Country western dance — Back by popular demand, this course is available for beginners and advanced dancers starting Nov. 5. The class for advanced dancers meets from 7:15 to 8:45 p.m., while beginners meet from 8:45 to 10:15 p.m. The cost for this six-week course is \$20 per couple.

Intercenter run — From Oct. 9 to 25, runners from JSC will be representing the Center in NASA's annual Intercenter Run. Races will be held Monday through Thursday from 5:15 p.m. until they are finished. There are two races, a 10 kilometer or a 2 mile run. T-shirts will be given to all participants.

Rhythmic aerobics — This exercise program of choreographed routines will contribute to your motor skills and muscle tone. The class meets from 5:15 to 6:16 p.m. beginning Nov. 6. The cost is \$12 for the four-week session.

Dancercise — Trim down and tone up with this class, which meets from 5:15 to 6:15 p.m. beginning Oct. 23. The cost is \$25 per person.

Table tennis tournament — The Rec Center's second annual table tennis tournament begins Oct. 27 from 10 a.m. to 3 p.m. Awards will be given to the top three finalists in men's and women's categories. The cost is \$2 per person and pre registration is required.

Word processing — Learn the Word Star software program in this class which begins Nov. 7 and meets from 5:30 to 8:30 p.m. Various types of machines will be available for hands-on experience. The six-week class costs \$165 per person.

Defensive driving — Learn to drive safely and qualify for a 10% reduction in your auto insurance rates for the next three years. The class will be held from 8 a.m. to 5 p.m. Nov. 17 at a cost of \$20 per person.

Counted cross stitch — Start making Christmas gifts when you learn this technique in a class which begins Oct. 25 and runs from 7 to 9 p.m. The cost is \$20 per person.

JSC Running Club — Persons interested in joining or becoming an officer in the newly formed JSC Running Club should contact Helen Munk at X3594.

Cookin' in the Cafeteria

Week of October 8-12, 1984

Monday: Holiday.

Tuesday: Beef & Barley Soup; Turkey & Dressing, Country Style Steak, Stuffed Cabbage (Special); Corn Cobbette, Okra & Tomatoes, French Beans.

Wednesday: Seafood Gumbo; Catfish w/Hush Puppies, Roast Pork w/Dressing, Pepper Steak (Special); Broccoli, Macaroni & Cheese, Stewed Tomatoes.

Thursday: Cream of Tomato Soup; Beef Tacos, BBQ Ham Slice, Hungarian Goulash, Chicken Fried Steak (Special); Spinach, Pinto Beans, Beets.

Friday: Seafood Gumbo; Liver & Onions, Deviled Crabs, Roast Beef w/Dressing, Tuna & Noodle Casserole (Special); Whipped Potatoes, Peas, Cauliflower.

Week of October 15 - 19, 1984

Monday: French Onion Soup; Beef Chop Suey, Polish Sausage w/German

Potato Salad, Breaded Veal Cutlet (Special); Okra & Tomatoes, Green Peas, Standard Daily Items: Roast Beef, Baked Ham, Fried Chicken, Fried Fish, Chopped Sirloin. Selection of Salads, Sandwiches and Pies.

Tuesday: Split Pea Soup; Salisbury Steak, Shrimp Creole, Fried Chicken (Special); Mixed Vegetables, Beets, Whipped Potatoes.

Wednesday: Seafood Gumbo; Fried Catfish w/Hush Puppies, Braised Beef Rib, BBQ Plate, Wieners & Beans, Shrimp Salad, Stuffed Bell Pepper (Special); Corn O'Brian, Rice, Italian Green Beans.

Thursday: Chicken Noodle Soup; Beef Stroganoff, Turkey & Dressing, BBQ Smoked Link (Special); Lima Beans, Buttered Squash, Spanish Rice.

Friday: Seafood Gumbo; Broiled Turbot, Liver & Onions, Fried Shrimp, Meat Sauce & Spaghetti (Special) Green Beans, Buttered Broccoli, Whipped Potatoes.

A note on ad policy

Way back in 1966, the decision was made to start a small advertising column for employees in the pages of the *Roundup*. For several years, the Swap Shop was just that—a small advertising column. Over the years, however, it has grown in both size and popularity, to the point where it now comes close to filling fully one fourth of the available space in this newspaper. At least one full day in the *Roundup's* tight production cycle must be devoted to sorting, deciphering, editing and typing an average of 150 ads per issue, and with rising demands on everyone's time these days, it has gone from the level of an easy task to that of a major production.

The service is free and, we think, beneficial to employees. Many tell us it is the most popular element of the paper, the section scanned first. This is as it should be, and we're glad to do it. But there are some problems with the Swap Shop, and come the first issue of 1985, we will begin to address them.

The basic problem with the Swap Shop is that most employees have no idea what goes into producing it. Not having benefit of that insight, it is only natural that many advertisers expect that which is sometimes neither possible nor a part of policy. We do

not, for example, write the ads for you. We don't take them down over the telephone. We don't run more than two in any one issue, and we won't run one or more ads for several issues automatically. The biggest reason for all of those rules is that we don't have time for it. The Public Information Branch is engaged in far more than producing the Swap Shop, and we just don't have time for the extra niceties. We also don't charge a cent for the ads, and that certainly has to be one of the best bargains around. (Demographically speaking, professional advertisers would kill for free access to the *Roundup's* readership.)

So, how to improve the flow of ads to the *Roundup*? How to cut down on the number of telephone calls seeking procedural information which has been unchanged for almost 20 years? How to make the policies and procedures well known to all who would advertise? The answer, reluctantly arrived at, is to introduce a bit of red tape.

The various and sundry forms which abound in our lives are the fluids which grease the machinery of government. Less grandly stated, you can't get a whole lot done around here without filling out a form first. Beginning with

the first *Roundup* issue in 1985, that will be true for the Swap Shop as well.

As this issue was going to press, the Management Services Division was beginning work on a document, JSC Form 1452, which commencing with the first issue of 1985 will be the only means by which an ad can be placed in the *Roundup*. As forms go, it is pretty simple, really. It concisely states the rules for ads and provides a quick idea of how to figure out what *Roundup* deadlines are. It has space for two advertisements to be written on it, and it requires that certain information be filled out (full name, mail code, office and home telephone numbers), or else the ad(s) will not be accepted. Simple as that.

We are hopeful this move will alleviate confusion and, after a transition period, make placing ads in the *Roundup* a somewhat simpler endeavor. We also hope readers will understand the need for the form, and our attempt to establish some cohesion with regard to the Swap Shop. Between now and January, we'll keep you updated on how to get the form, and we'll keep reminding you that if you like advertising in the Swap Shop, you need to remember that phrase: "JSC Form 1452."

—Brian Welch, Editor